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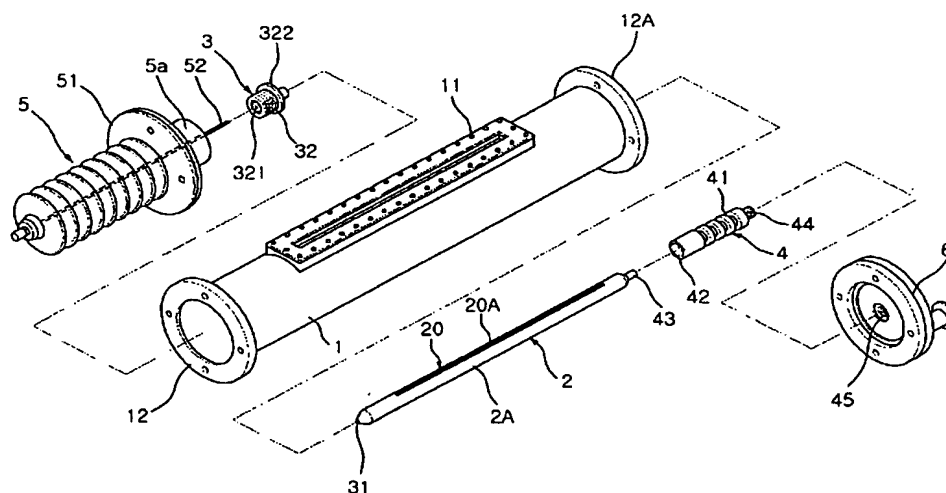
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(54) Title: **A LARGE-AREA SHOWER ELECTRON BEAM IRRADIATOR WITH FIELD EMITTERS AS AN ELECTRON  
SOURCE**



(57) Abstract: The invention provides an electron beam irradiator capable of performing electron beam irradiation in a wide area at a high current density with a field emitter tip. The electron beam irradiator comprises: a vacuum chamber having a beam irradiation window formed longitudinally in an outer periphery of the vacuum chamber; a cathode placed centrally and longitudinally inside the vacuum chamber, and having a field emitter tip formed on the cathode, corresponding to the beam irradiation window; and a high voltage supply placed at one end of the vacuum chamber, and adapted to apply high voltage toward the cathode. According to the invention, electron beam irradiation can be made in a wide area without using an electromagnet as well as in a high current density without using a heater such as a filament or an additional power supply, thereby to ensure a simplified structure as well as a reduced size.



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